☐ 1: J Allergy Clin Immunol. 2000 Feb;105(2 Pt 1):378-84.

Related Articles,

ELSEVIER SCIENCE FULL-TEXT ARTICLE

# Mutational analysis of the IgE-binding epitopes of P34/Gly m Bd 30K.

**Helm RM, Cockrell G, Connaughton C, West CM, Herman E, Sampson HA, Bannon GA, Burks AW.**

Department of Pediatrics, University of Arkansas for Medical Sciences, Arkansas Children's Nutrition Center, Little Rock, AR 72202, USA.

BACKGROUND: Peanuts and soybeans are 2 foods that have been shown tc responsible for many atopic disorders. Because of their nutritional benefit, soybean proteins are now being used increasingly in a number of food produ Previous studies have documented multiple allergens in soybean extracts, including glycinin, beta-conglycinin, and the P34/Gly m Bd 30K protein. OBJECTIVE: Our overall goal was to identify soybean-specific allergens to begin to understand molecular and immunochemical characteristics of legum proteins. The specific aim of the current investigation was to identify the essential amino acid residues necessary for IgE binding in the 5 distinct immunodominant epitopes of P34/Gly m Bd 30K. METHODS: Serum IgE fi 6 clinically sensitive soybean-allergic individuals was used to identify P34/G m Bd 30K in the native and single amino acid substituted peptides with use c the SPOTS peptide synthesis technique to determine critical amino acids required for IgE binding. RESULTS: The intensity of IgE binding and epitop recognition by serum IgE from the individuals varied substantially. With use serum from 6 clinically soybean-sensitive individuals, 2 of the 5 immunodominant epitopes could be mutagenized to non-IgE binding peptide CONCLUSIONS: Single-site amino acid substitution of the 5 immunodomin epitopes of Gly m Bd 30K with alanine revealed that IgE binding could be reduced or eliminated in epitopes 6 and 16 in the serum obtained from 6 soybean-sensitive patients.

Publication Types:

- Clinical Trial
- Controlled Clinical Trial

PMID: 10669862 [PubMed - indexed for MEDLINE]